To: Rumrill, Nancy[Rumrill.Nancy@epa.gov]

**Cc:** Rebecca Sawyer[rsawyer@excelsiormining.com]; Alison

Jones[ajones@clearcreekassociates.com]; Roland Goodgame[rgoodgame@excelsiormining.com]

From: Doug Bartlett

**Sent:** Wed 3/1/2017 3:39:39 PM

Subject: Question regarding step rate testing

r5-deepwell-guidance7-determination-maximum-injection-pressure-class1-199401-9pp[1].pdf

INFO-StepRateTest[1].pdf

Nancy – in our meeting last week, you may recall we had a discussion about step rate testing to verify the fracture gradient proposed for the Gunnison project. I have attached two papers that I found online from EPA regarding the methodology for step rate testing. Are there any other papers that I should be reviewing? The step rate methodology that is described seems to match with what Excelsior did to obtain the fracture gradient value proposed in the UIC application.

Any guidance you can give me on this would be greatly appreciated!

Thank you,

Doug Bartlett

R. Douglas Bartlett, RG, CHG

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